

663380-158850

1           1.    A polypeptide constituting a cell surface  
2 molecule having characteristics below:

3           (a)   said cell surface molecule is expressed in at  
4 least thymocytes and mitogen-stimulated lymphoblast cells;

5           (b)   an antibody reactive to said cell surface  
6 molecule induces adhesion between mitogen-stimulated  
7 lymphoblast cells;

8           (c)   an antibody reactive to said cell surface  
9 molecule induces proliferation of peripheral blood  
10 lymphocytes in the presence of an antibody against CD3;

11          (d)   said cell surface molecule has a partial amino  
12 acid sequence represented by Phe-Asp-Pro-Pro-Phe in its  
13 extracellular region; and

14          (e)   said cell surface molecule has a partial amino  
15 acid sequence represented by Tyr-Met-Phe-Met in its  
16 cytoplasmic region.

1           2.    The polypeptide of claim 1, comprising the  
2 amino acid sequence of SEQ ID NO: 2 or the amino acid  
3 sequence of SEQ ID NO: 2 in which one or more amino acids  
4 are substituted, deleted, or added.

1           3.    The polypeptide of claim 1, which is encoded by  
2 a DNA hybridizing with a DNA having the nucleotide sequence  
3 of SEQ ID NO: 1 under stringent conditions.

1           4.    The polypeptide of claim 1, comprising an amino  
2 acid sequence having 60% or more homology with an amino acid  
3 sequence of SEQ ID NO: 2.

1           5.    The polypeptide of claim 1, wherein said cell  
2 surface molecule is derived from human.



1            16. A homodimer molecule comprising two polypeptide  
2 fragments, wherein each of the fragments comprises an  
3 extracellular region of the polypeptide of claim 1 and said  
4 two polypeptide fragments bridged through disulfide bonds to  
5 each other.

1            17. The homodimer molecule of claim 16, wherein  
2    said polypeptide is a human-derived polypeptide having an  
3    amino acid sequence of SEQ ID NO: 2.

1 18. A pharmaceutical composition comprising the  
2 polypeptide fragment of claim 14 and a pharmaceutically  
3 acceptable carrier.

1 19. A fusion polypeptide comprising an  
2 extracellular region of the polypeptide of claim 1 and a  
3 constant region of a human immunoglobulin (Ig) heavy chain  
4 or a portion of the constant region.

1           20. The fusion polypeptide of claim 19, wherein the  
2   immunoglobulin is IgG.

21. The fusion polypeptide of claim 19, wherein the portion of the constant region comprises a hinge region, C2 domain, and C3 domain of IgG.

1           22. The fusion polypeptide of claim 19, wherein  
2   said polypeptide is a human-derived polypeptide having an  
3   amino acid sequence of SEQ ID NO: 2.

23. A homodimer molecule comprising two fusion polypeptides of claim 19, wherein the two polypeptides bridged through disulfide bonds to each other.

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1           24. A homodimer molecule comprising two fusion  
2 polypeptides of claim 22, wherein the two polypeptides  
3 bridged through disulfide bonds to each other.

1           25. A pharmaceutical composition comprising either  
2 of the fusion polypeptide of claim 22 and a pharmaceutically  
3 acceptable carrier.

1           26. The pharmaceutical composition of claim 25,  
2 wherein said pharmaceutical composition is utilized for  
3 treating autoimmune diseases or allergic diseases, or for  
4 preventing said disease symptom.

1           27. An antibody or a portion thereof reactive to  
2 the polypeptide of claim 1, or the cell surface molecule  
3 comprising said polypeptide.

1           28. The antibody of claim 27 or a portion thereof,  
2 wherein said antibody is a monoclonal antibody.

1           29. A monoclonal antibody or a portion thereof  
2 reactive to the polypeptide having an amino acid sequence of  
3 SEQ ID NO: 2, the polypeptide fragment of claim 14, or the  
4 human-derived cell surface molecule comprising said  
5 polypeptide.

1           30. A monoclonal antibody or a portion thereof  
2 reactive to the polypeptide of claim 1 or the cell surface  
3 molecule comprising said polypeptide, wherein the effect of  
4 said monoclonal antibody on mitogen-stimulated lymphoblast  
5 cells is substantially the same as the effect of a  
6 monoclonal antibody produced by a hybridoma identified by an

7 international deposit accession No. FERM BP-5707 on mitogen-  
8 stimulated rat lymphoblast cells.

1 31. A monoclonal antibody or a portion thereof  
2 reactive to the polypeptide of claim 1 or the cell surface  
3 molecule comprising said polypeptide, wherein the effect of  
4 said monoclonal antibody on mitogen-stimulated lymphoblast  
5 cells is substantially the same as the effect of a  
6 monoclonal antibody produced by a hybridoma identified by an  
7 international deposit accession No. FERM BP-5708 on mitogen-  
8 stimulated rat lymphoblast cells.

1 32. A pharmaceutical composition comprising the  
2 monoclonal antibody of claim 29 or a portion thereof and a  
3 pharmaceutically acceptable carrier.

1 33. The pharmaceutical composition of claim 32,  
2 wherein said pharmaceutical composition is utilized for  
3 treating autoimmune diseases or allergic diseases, or for  
4 preventing said disease symptom.

1 34. A hybridoma producing the monoclonal antibody  
2 of claim 28.

1 35. A transgenic mouse in which a gene encoding the  
2 polypeptide of claim 1 is integrated into its endogenous  
3 gene, wherein said gene is a human-derived gene comprising a  
4 nucleotide sequence of SEQ ID NO: 1 or a rat-derived gene  
5 comprising a nucleotide sequence corresponding to nucleotide  
6 residues 35 to 637 of SEQ ID NO: 4.

1            36. A knockout mouse in which its endogenous gene  
2 encoding the mouse polypeptide of claim 1 comprising the  
3 amino acid sequence encoded by the gene of SEQ ID NO: 5 is  
4 inactivated so that said mouse polypeptide is not produced.

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